

REMARKS

Claims 1-11, 17-21, and 26-29 are canceled so that the undisputed subject matter can proceed to issuance in a timely manner. Applicant reserves the right to introduce claims 1-11, 17-21, and 26-29 in a continuation application at a later date. Claim 30 is currently amended to overcome the objection thereto and not to overcome any art. Claims 35-40 are added. Claims 12-16, 22-25, and 30-40 are now pending. Drawings 5 and 7 are amended, as is the title. Applicant respectfully submits that the amendments herein and the added claims are fully supported by the Specification as originally filed and do not introduce new matter.

Drawings

Applicant believes that the drawings, as amended, overcome the objections thereto.

Specification

Applicant believes that the title, as amended, overcomes the objection thereto.

Claim Objections

Claims 7-8, 21, 30-34 were objected to. Claims 7-8 and 21 are canceled overcoming the objection thereto. Applicant believes that claim 30, as amended, overcomes the objection thereto. Since claims 31-34 were objected to because they depend on claim 30, applicant respectfully submits that the amendment to claim 30 overcomes the objections to claims 31-34.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-3, 5-11 and 17-21 were rejected under 35 U.S.C. § 102(b) as being anticipated by Miyata et al. (U.S. Patent No. 5,529,634). Claims 1-3, 5-11 and 17-21 have been canceled, thereby overcoming the rejection thereof.

Claim Rejections Under 35 U.S.C. § 103

Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyata et al. (U.S. Patent No. 5,529,634) as applied to claim 1 above, and further in view of Miller et al. (U.S. Patent No. 6,251,488 B1). Claims 26-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyata et al. (U.S. Patent No. 5,529,634) in view of Lee (U.S. Patent No. 6,355,533 B2) and Noguchi (US 5,343,434). Claims 4 and 26-29 have been canceled, thereby overcoming the rejection thereof.

Allowable Subject Matter

Applicant acknowledges that claims 12-16 and 22-25 were indicated to be allowed.

The Examiner indicated that claims 30-34 would be allowable if rewritten or amended to overcome the objection to claim 30. Claim 30 has been amended to overcome the objection to claim 30. Therefore, claims 30-34 should be allowed.

Added Claims

Claims 35-40 are added. Claim 35 depends directly from claim 12 and thus includes patentable limitations of claim 12. Therefore, claim 35 should be allowed.

Applicant believes that claim 12 is generic to each of claims 36-38. Claims 36 and 37 are each directed to a method of forming a via plug, each including directing an aerosol stream of particles of a first conductive material onto a sidewall of the via to form a seed layer of the first conductive material on the sidewall and plating the seed layer with a second conductive material. As indicated in the Office Action, this not taught or suggested by the prior art of record, and claims 36 and 37 should be allowed.

Claim 38 depends directly from claim 37 and thus includes patentable limitations of claim 37. Therefore, claim 38 should be allowed.

Applicant believes that claim 22 is generic to claim 39. Claim 39 is directed to a method of forming an integrated circuit device, including forming a via plug within a via, where forming the via plug includes directing an aerosol stream of particles of a first conductive material onto a sidewall of the via to form a seed layer of the first conductive material on the sidewall, and plating the seed layer with a second conductive material. As indicated in the Office Action, this not taught or suggested by the prior art of record, and claim 39 should be allowed.

Claim 40 depends directly from claim 39 and thus includes patentable limitations of claim 39. Therefore, claim 40 should be allowed.

Applicant respectfully requests admission and allowance of claims 35-40.


CONCLUSION

Claims 1-11, 17-21, and 26-29 are canceled so that the undisputed subject matter can proceed to issuance in a timely manner. Claim 30 is currently amended to overcome the objection thereto and not to overcome any art. Claims 35-40 are added. Claims 12-16, 22-25, and 30-40 are now pending. Claims 12-16 and 22-25 were allowed. In view of the above remarks, Applicant respectfully submits that claims 30-40 are in condition for allowance and requests reconsideration of the application and allowance of claims 30-40.

The Examiner is invited to contact Applicant's Representatives at direct dial (612) 312-2208 if there are any questions regarding this Response or if prosecution of this application may be assisted thereby. No new matter has been added and no additional fee is required by this response.

Respectfully submitted,

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Tod A. Myrum
Reg. No. 42,922

Attorneys for Applicant
Leffert Jay & Polglaze
P.O. Box 581009
Minneapolis, MN 55458-1009
T 612 312-2200
F 612 312-2250

AMENDMENTS TO THE DRAWINGS

Figures 5 and 7 have been amended. In Figure 5, reference number 112 is replaced with reference number 162 to conform Figure 5 to paragraph [0027] of the Specification. In Figure 7, reference number 600 is replaced with reference number 700 to conform Figure 7 to paragraph [0029] of the Specification, and to overcome the fact that reference number 600 does not appear in the Specification. The amendments are shown in the attached annotated marked-up drawing sheets and are included in the attached replacement sheets. Applicant respectfully submits that the corrections are apparent from reading the Specification in conjunction with the drawings, and, as such, the corrections are fully supported by the Specification as filed.



Inventor: Kyle K. Kirby
METHODS OF FORMING VIA PLUGS
Atty Docket No. 400.231US01 Serial No. 10/613,235

ANNOTATED MARKED-UP DRAWINGS

3/6

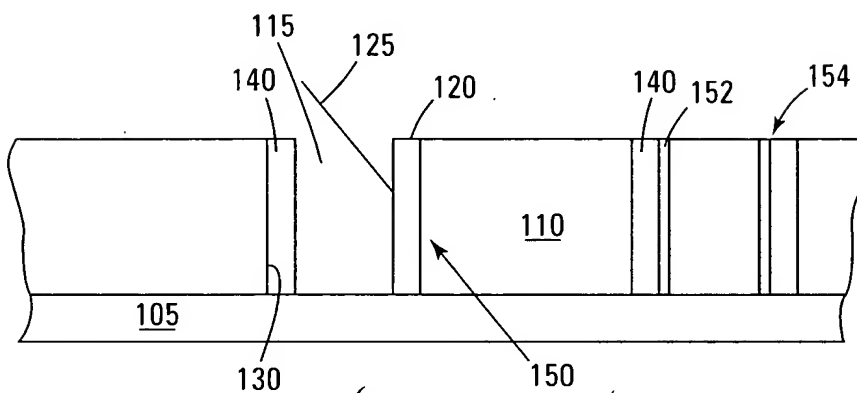


Fig. 4

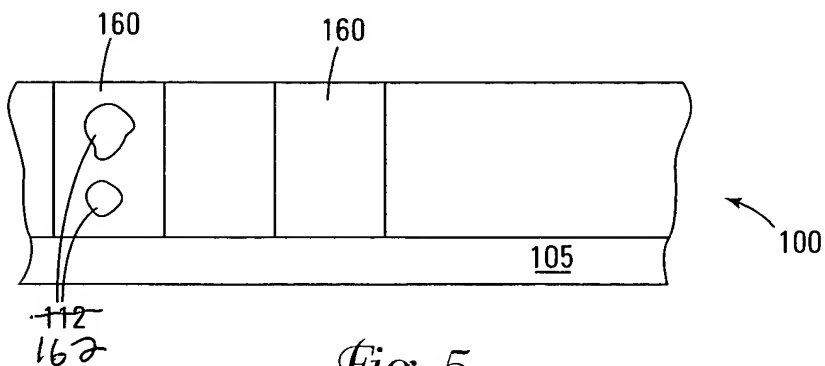


Fig. 5



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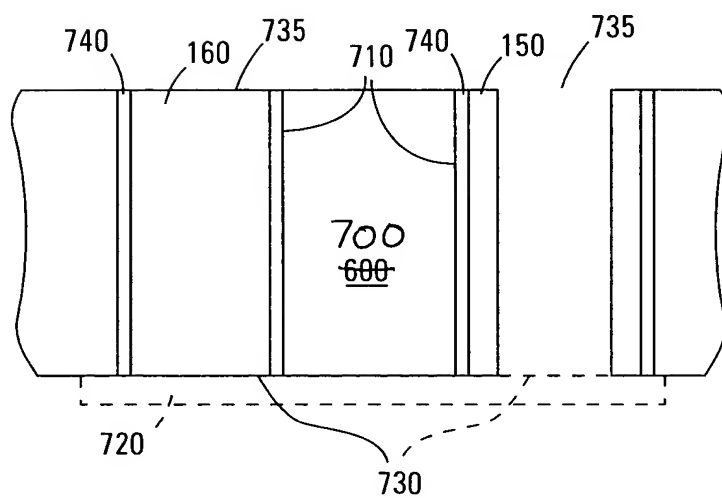


Fig. 7